



References

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Appendices

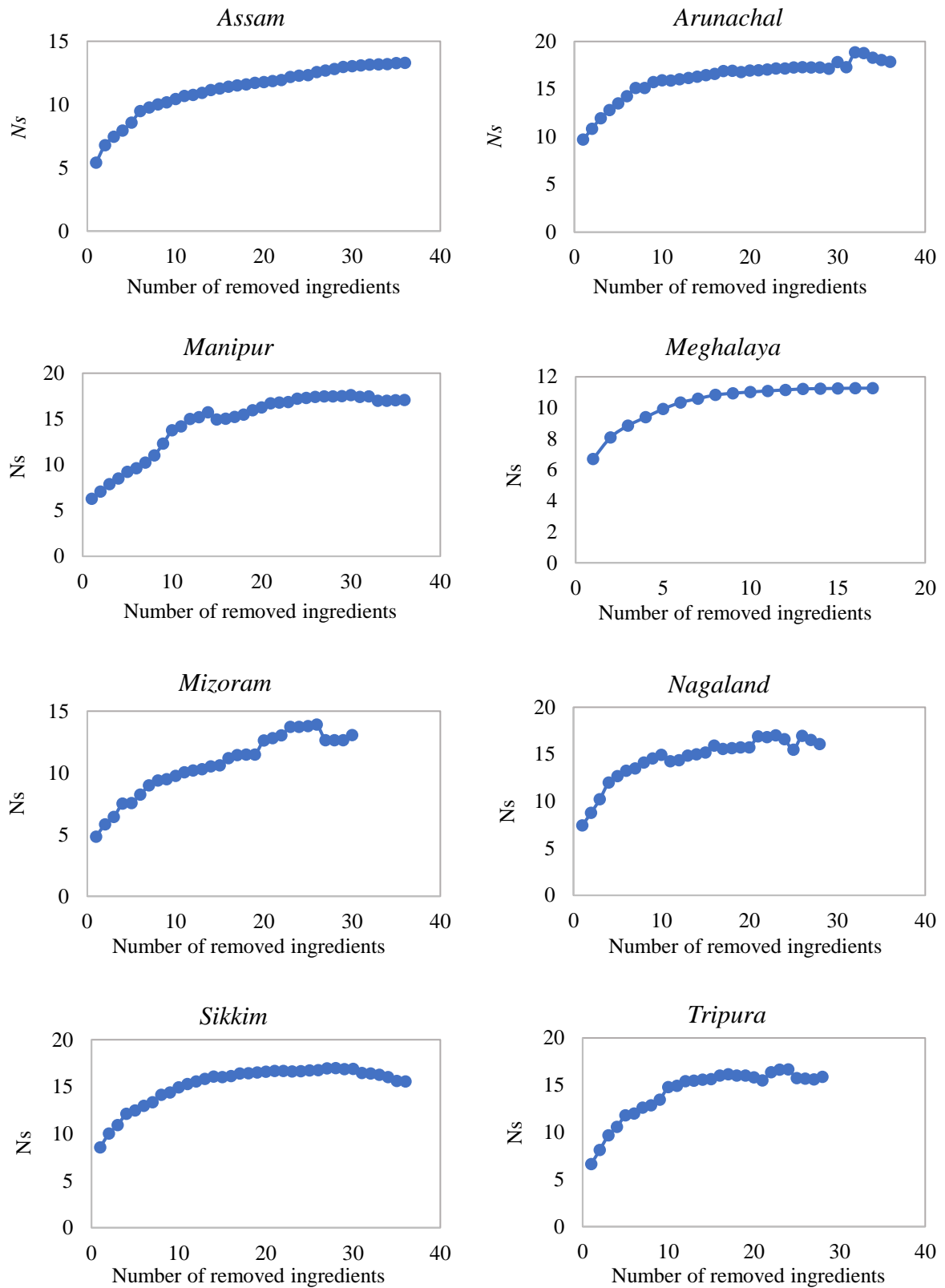


Fig. A1 Change observed in N_s values after deleting the least contributing ingredients sequentially

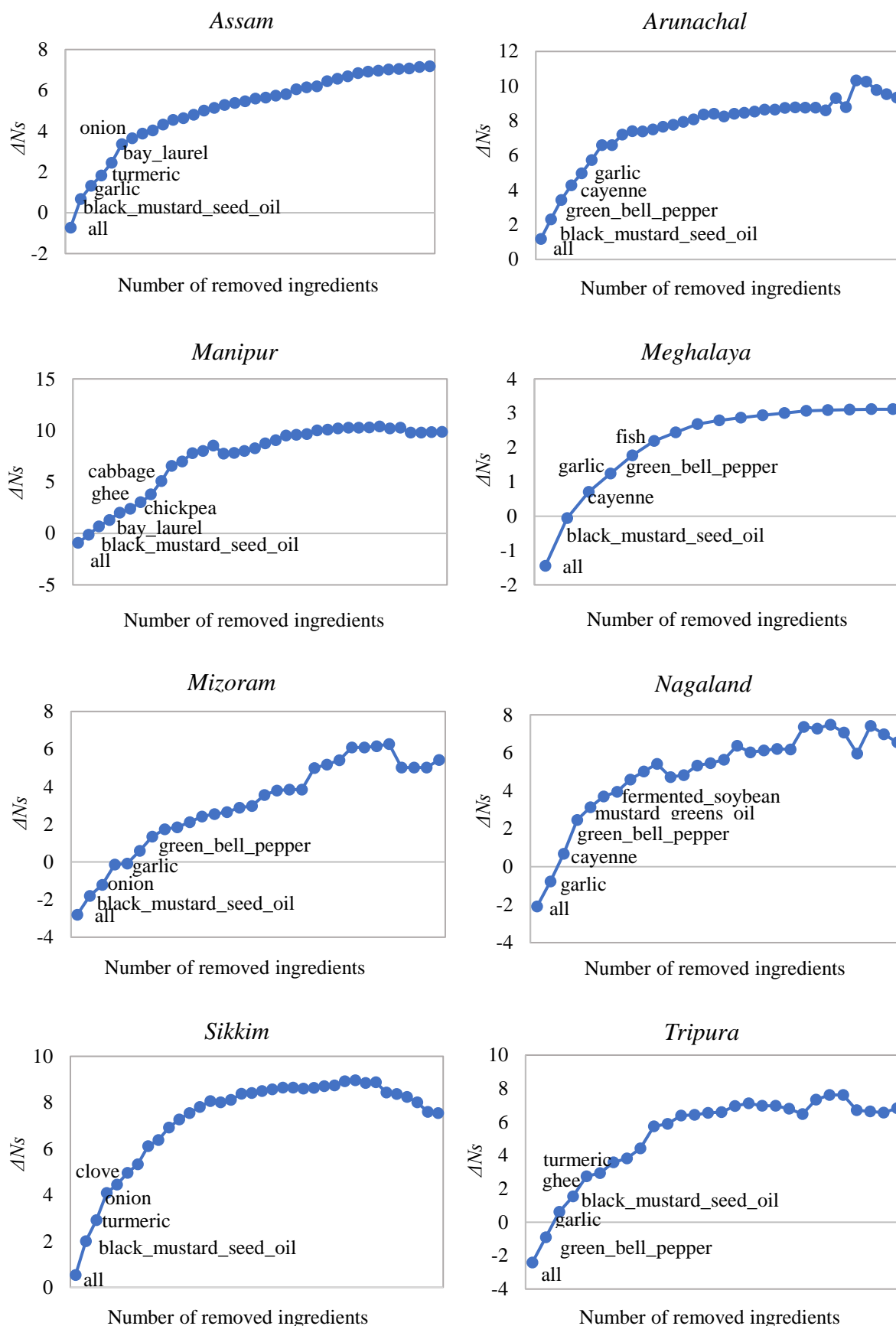
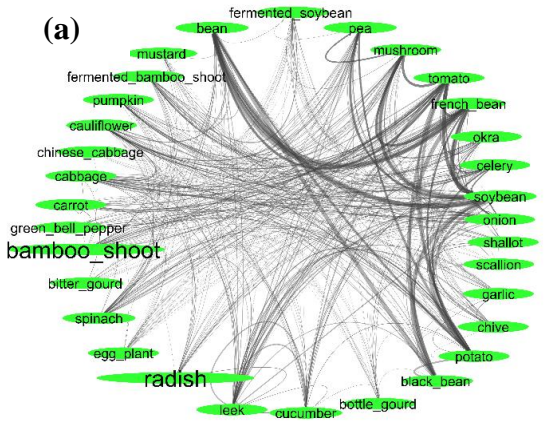
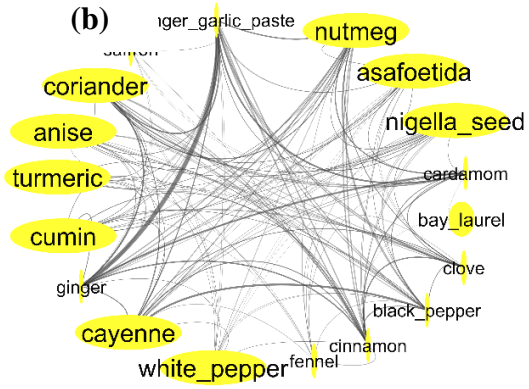


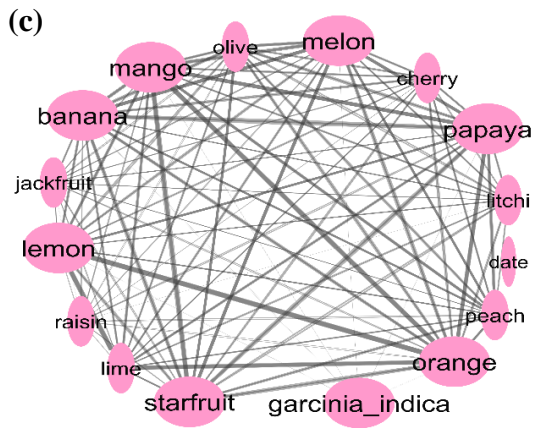
Fig. A2 Change observed in ΔN_s values after deleting the least contributing ingredients sequentially, all signifies that none of the ingredients are removed.



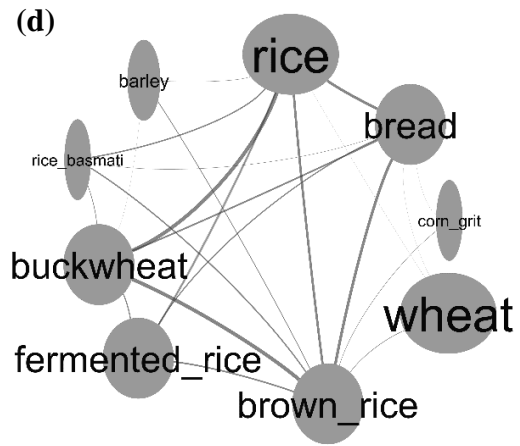
Number of Vegetable= 31, $\bar{N}_s^{vegetable} = 29.24$



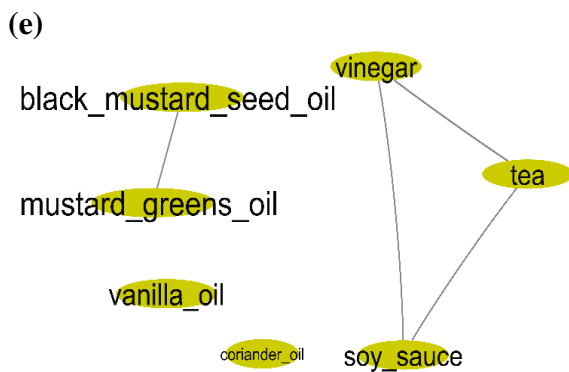
Number of Spice= 22, $\bar{N}_s^{spice} = 18.81$



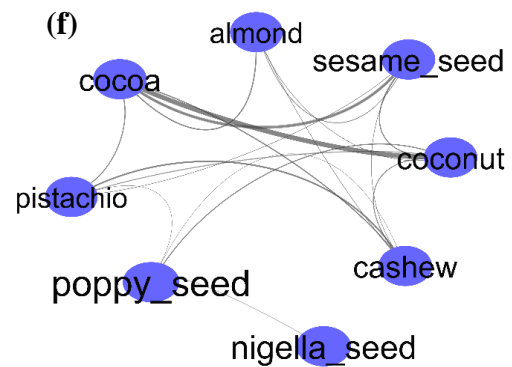
Number of Fruit= 17, $\bar{N}_s^{fruit} = 30.73$



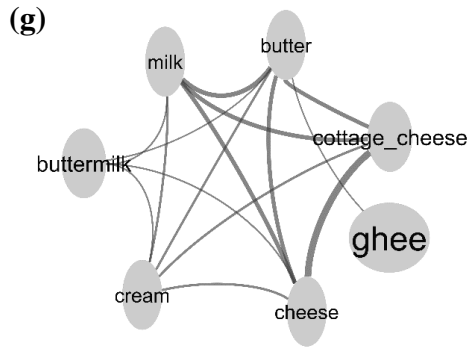
Number of Cereal= 9, $\bar{N}_s^{cereal/crop} = 11.43$



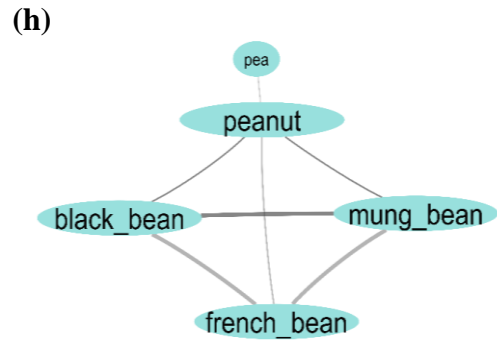
Number of Plant derivative= 6, $\bar{N}_s^{plant\ derivative} = 5.91$



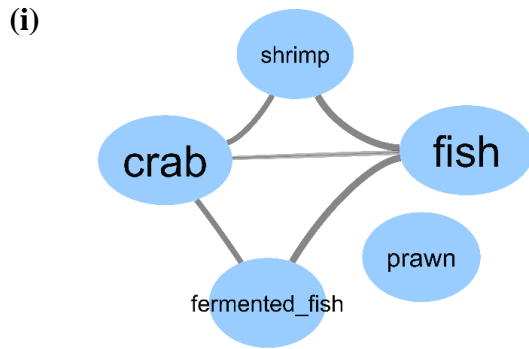
Number of Nut/Seed= 8, $\bar{N}_s^{nut/seed} = 7.51$



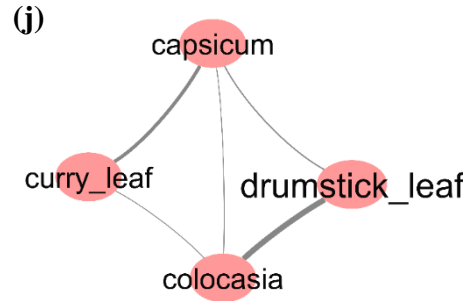
Number of Dairy= 7, $\bar{N}_s^{dairy} = 15.28$



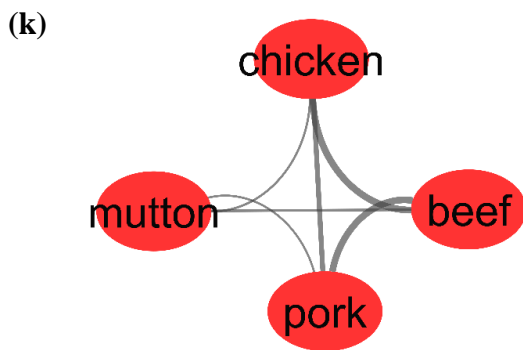
Number of Pulse= 5, $\bar{N}_s^{pulse} = 8.38$



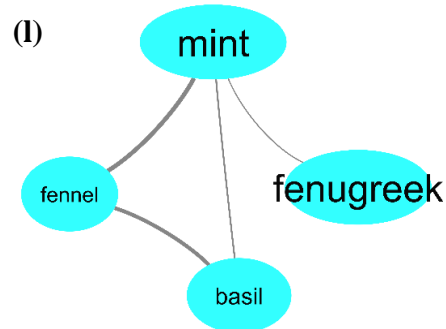
Number of Fish/Seafood= 5, $\bar{N}_s^{fish/seafood} = 6.94$



Number of Plant= 4, $\bar{N}_s^{plant} = 3.65$



Number of Meat= 4, $\bar{N}_s^{meat} = 13.80$



Number of Herb= 4, $\bar{N}_s^{herb} = 2.02$

Fig. A3 Flavour sharing of ingredient within the category. Patterns of intra-category flavour sharing based on 12 major ingredients category (a) Vegetable, (b) Spice, (c) Fruit, (d) Cereal/Crop, (e) Plant derivative, (f) Nut/Seed, (g) Dairy, (h) Pulse, (i) Fish/Seafood, (j) Plant, (k) Meat, (l) Herb. The colour of each category are represented as per in Fig. 4.11

Table- A1. List of flavour compound of bamboo shoot

| #ID | Ingredient | Compound ID | Compound name |
|------|--------------|-------------|--------------------------------------|
| 1582 | bamboo_shoot | 20 | lactic_acid |
| 1582 | bamboo_shoot | 108 | isobutyraldehyde |
| 1582 | bamboo_shoot | 126 | 3-methyl-2-butenal |
| 1582 | bamboo_shoot | 148 | benzyl_benzoate |
| 1582 | bamboo_shoot | 159 | cis-3-hexenal |
| 1582 | bamboo_shoot | 274 | 3-hexanone |
| 1582 | bamboo_shoot | 285 | 3-(methylthio)_propionaldehyde |
| 1582 | bamboo_shoot | 317 | ethyl_acetate |
| 1582 | bamboo_shoot | 322 | acetone |
| 1582 | bamboo_shoot | 347 | cinnamic_acid |
| 1582 | bamboo_shoot | 374 | coumarin_(prohibited) |
| 1582 | bamboo_shoot | 397 | 6-methyl-5-hepten-2-one |
| 1582 | bamboo_shoot | 423 | vanillin |
| 1582 | bamboo_shoot | 519 | methyl_benzoate |
| 1582 | bamboo_shoot | 543 | cinnamyl_alcohol |
| 1582 | bamboo_shoot | 587 | isoeugenol |
| 1582 | bamboo_shoot | 606 | phenethyl_acetate |
| 1582 | bamboo_shoot | 608 | (+/?)_2-methyl-1-butanol |
| 1582 | bamboo_shoot | 611 | benzyl_alcohol |
| 1582 | bamboo_shoot | 657 | n-octanal |
| 1582 | bamboo_shoot | 676 | 4-hydroxybenzaldehyde |
| 1582 | bamboo_shoot | 724 | heptanoic_acid |
| 1582 | bamboo_shoot | 728 | 3-(methylthio)propanol |
| 1582 | bamboo_shoot | 734 | phenylacetaldehyde |
| 1582 | bamboo_shoot | 737 | phenylacetic_acid |
| 1582 | bamboo_shoot | 764 | 2-methylbutyraldehyde |
| 1582 | bamboo_shoot | 784 | geranyl_acetate |
| 1582 | bamboo_shoot | 791 | menthone |
| 1582 | bamboo_shoot | 912 | indole |
| 1582 | bamboo_shoot | 921 | citral_(neral) |
| 1582 | bamboo_shoot | 951 | farnesol |
| 1582 | bamboo_shoot | 954 | geraniol |
| 1582 | bamboo_shoot | 995 | diacetyl |
| 1582 | bamboo_shoot | 1004 | propionaldehyde |
| 1582 | bamboo_shoot | 1020 | 1-pyrroline |
| 1582 | bamboo_shoot | 1022 | cinnamaldehyde |
| 1582 | bamboo_shoot | 1027 | cyclopentanone |
| 1582 | bamboo_shoot | 1033 | 2-butanone |
| 1582 | bamboo_shoot | 1045 | heptanal |
| 1582 | bamboo_shoot | 1098 | γl-4-hydroxy-5-methyl-3(2h)-furanone |
| 1582 | bamboo_shoot | 1415 | 2-(4-hydroxyphenyl)ethanol |
| 1582 | bamboo_shoot | 1416 | 2-isopropyl-5-methylcyclohexanone |
| 1582 | bamboo_shoot | 1417 | 2-phenylethanol |
| 1582 | bamboo_shoot | 1418 | 3,4-dihydroxybenzaldehyde |

| | | | |
|------|--------------|------|---------------------------|
| 1582 | bamboo_shoot | 1419 | 3,4-dihydroxybenzoic acid |
| 1582 | bamboo_shoot | 1420 | 3-methyl-1-butanol |
| 1582 | bamboo_shoot | 1421 | 3-methylbutanal |
| 1582 | bamboo_shoot | 1422 | 3-pentanone |
| 1582 | bamboo_shoot | 1423 | 3-phenylpropanoic acid |
| 1582 | bamboo_shoot | 1424 | 4-hexen-3-one |
| 1582 | bamboo_shoot | 1425 | acrolein |
| 1582 | bamboo_shoot | 1426 | allyl alcohol |
| 1582 | bamboo_shoot | 1427 | alpha-l-sorbopyranose |
| 1582 | bamboo_shoot | 1428 | alpha-maltose |
| 1582 | bamboo_shoot | 1429 | apigenin |
| 1582 | bamboo_shoot | 1430 | benzaldehyde |
| 1582 | bamboo_shoot | 1431 | betaine |
| 1582 | bamboo_shoot | 1432 | calcium lactate |
| 1582 | bamboo_shoot | 1433 | cid 644104 |
| 1582 | bamboo_shoot | 1434 | cis-3-hexenyl acetate |
| 1582 | bamboo_shoot | 1435 | d-mannitol |
| 1582 | bamboo_shoot | 1436 | daidzein |
| 1582 | bamboo_shoot | 1437 | daidzin |
| 1582 | bamboo_shoot | 1438 | dl-liquiritigenin |
| 1582 | bamboo_shoot | 1439 | ethyl vinyl ketone |
| 1582 | bamboo_shoot | 1440 | farnesal |
| 1582 | bamboo_shoot | 1441 | hexanal |
| 1582 | bamboo_shoot | 1442 | hydrogen cyanide |
| 1582 | bamboo_shoot | 1443 | hydrogen peroxide |
| 1582 | bamboo_shoot | 1444 | indole-3-acetic acid |
| 1582 | bamboo_shoot | 1445 | isoliquiritigenin |
| 1582 | bamboo_shoot | 1446 | kaempferol |
| 1582 | bamboo_shoot | 1447 | linamarin |
| 1582 | bamboo_shoot | 1448 | luteolin |
| 1582 | bamboo_shoot | 1449 | methanethiol |
| 1582 | bamboo_shoot | 1450 | naringenin |
| 1582 | bamboo_shoot | 1451 | nicotine |
| 1582 | bamboo_shoot | 1452 | nsc5112 |
| 1582 | bamboo_shoot | 1453 | p-coumaric acid |
| 1582 | bamboo_shoot | 1454 | phloretin |
| 1582 | bamboo_shoot | 1455 | phlorizin |
| 1582 | bamboo_shoot | 1456 | salicylic acid |
| 1582 | bamboo_shoot | 1457 | sinapic acid |
| 1582 | bamboo_shoot | 1458 | succinic acid |
| 1582 | bamboo_shoot | 1459 | taxifolin |
| 1582 | bamboo_shoot | 1460 | thiamine |
| 1582 | bamboo_shoot | 1461 | thiamine hydrochloride |
| 1582 | bamboo_shoot | 1462 | trans-2-hexen-1-ol |
| 1582 | bamboo_shoot | 1463 | trans-3-hexen-1-ol |
| 1582 | bamboo_shoot | 1464 | tributylin |

Table- A2. List of flavour compound of fermented rice

| #ID | Ingredient | Compound ID | Compound name |
|------|----------------|-------------|---|
| 1585 | fermented_rice | 20 | lactic_acid |
| 1585 | fermented_rice | 38 | 4-hydroxy-3-methoxybenzoic_acid |
| 1585 | fermented_rice | 105 | pyruvic_acid |
| 1585 | fermented_rice | 136 | isoamyl_alcohol |
| 1585 | fermented_rice | 158 | oleic_acid |
| 1585 | fermented_rice | 198 | valeric_acid |
| 1585 | fermented_rice | 229 | palmitic_acid |
| 1585 | fermented_rice | 275 | lauric_acid |
| 1585 | fermented_rice | 282 | vanillin |
| 1585 | fermented_rice | 299 | nonanoic_acid |
| 1585 | fermented_rice | 333 | isobutyl_acetate |
| 1585 | fermented_rice | 369 | 4-methylpentanoic_acid |
| 1585 | fermented_rice | 405 | levulinic_acid |
| 1585 | fermented_rice | 423 | vanillin |
| 1585 | fermented_rice | 490 | hydrogen_sulfide |
| 1585 | fermented_rice | 524 | octanoic_acid |
| 1585 | fermented_rice | 549 | isovaleric_acid |
| 1585 | fermented_rice | 599 | methyl_sulfide |
| 1585 | fermented_rice | 600 | propyl_alcohol |
| 1585 | fermented_rice | 634 | ethyl_undecanoate |
| 1585 | fermented_rice | 719 | propionic_acid |
| 1585 | fermented_rice | 742 | methyl_mercaptan |
| 1585 | fermented_rice | 853 | phenethylamine |
| 1585 | fermented_rice | 861 | maltol |
| 1585 | fermented_rice | 876 | l-malic_acid |
| 1585 | fermented_rice | 877 | acetal |
| 1585 | fermented_rice | 984 | methyl_disulfide |
| 1585 | fermented_rice | 1001 | propyl_acetate |
| 1585 | fermented_rice | 1002 | methyl-3-hydroxy-2,5-dihydrofuran-2-one |

Table- A3. List of flavour compound of fermented fish

| #ID | Ingredient | Compound ID | Compound name |
|------|----------------|-------------|------------------------------------|
| 1584 | fermented_fish | 18 | (+/?)-1-phenylethylmercaptan |
| 1584 | fermented_fish | 19 | 3,5-diethyl-2-methylpyrazine |
| 1584 | fermented_fish | 22 | methylsulfinylmethane |
| 1584 | fermented_fish | 52 | 3-ethylpyridine |
| 1584 | fermented_fish | 63 | 3-penten-2-one |
| 1584 | fermented_fish | 69 | hydroxynonanoic_acid,_d-lactone |
| 1584 | fermented_fish | 71 | methyl_thiobutyrate |
| 1584 | fermented_fish | 84 | 2,3-dimethylpyrazine |
| 1584 | fermented_fish | 118 | 2-nonanone |
| 1584 | fermented_fish | 136 | isoamyl_alcohol |
| 1584 | fermented_fish | 161 | p-dimethoxybenzene |
| 1584 | fermented_fish | 183 | 4-methyl-3-penten-2-one |
| 1584 | fermented_fish | 184 | 5-ethyl-2-methylpyridine |
| 1584 | fermented_fish | 189 | 2-ethyl-3,5(6)-dimethylpyrazine |
| 1584 | fermented_fish | 198 | valeric_acid |
| 1584 | fermented_fish | 203 | 1-octen-3-ol |
| 1584 | fermented_fish | 211 | 2-ethyl-5-methylpyrazine |
| 1584 | fermented_fish | 229 | palmitic_acid |
| 1584 | fermented_fish | 249 | pyridine |
| 1584 | fermented_fish | 270 | 2-(methylthio)ethanol |
| 1584 | fermented_fish | 284 | 3,5-dimethyl-1,2,4-trithiolane |
| 1584 | fermented_fish | 285 | 3-(methylthio)_propionaldehyde |
| 1584 | fermented_fish | 287 | 5-methyl-2-thiophenecarboxaldehyde |
| 1584 | fermented_fish | 299 | nonanoic_acid |
| 1584 | fermented_fish | 338 | furfuryl_alcohol |
| 1584 | fermented_fish | 345 | g-nonalactone |
| 1584 | fermented_fish | 408 | 4,5-dimethyl_thiazole |
| 1584 | fermented_fish | 424 | 2-pentylfuran |
| 1584 | fermented_fish | 427 | pyrrole |
| 1584 | fermented_fish | 435 | 1-hexadecanol |
| 1584 | fermented_fish | 465 | d-ribose |
| 1584 | fermented_fish | 490 | hydrogen_sulfide |
| 1584 | fermented_fish | 524 | octanoic_acid |
| 1584 | fermented_fish | 533 | 4-methylthiazole |
| 1584 | fermented_fish | 549 | isovaleric_acid |
| 1584 | fermented_fish | 550 | 2-ethylpyrazine |
| 1584 | fermented_fish | 554 | n-nonanal |
| 1584 | fermented_fish | 560 | dimethyl_trisulfide |
| 1584 | fermented_fish | 595 | 2-octanone |
| 1584 | fermented_fish | 599 | methyl_sulfide |
| 1584 | fermented_fish | 656 | 3-heptanone |
| 1584 | fermented_fish | 657 | n-octanal |
| 1584 | fermented_fish | 667 | 2-ethyl-3-methylpyrazine |
| 1584 | fermented_fish | 686 | trimethylamine |

| | | | |
|------|----------------|------|---|
| 1584 | fermented_fish | 689 | 2,4,5-trimethyl_thiazole |
| 1584 | fermented_fish | 693 | 3-ethyl-2,6-dimethylpyrazine |
| 1584 | fermented_fish | 724 | heptanoic_acid |
| 1584 | fermented_fish | 728 | 3-(methylthio)propanol |
| 1584 | fermented_fish | 742 | methyl_mercaptan |
| 1584 | fermented_fish | 753 | 2,3,5,6-tetramethylpyrazine |
| 1584 | fermented_fish | 766 | methyl_myristate |
| 1584 | fermented_fish | 779 | 2-trans,_6-trans-nonadienal |
| 1584 | fermented_fish | 786 | 1-penten-3-ol |
| 1584 | fermented_fish | 806 | isobutyl_alcohol |
| 1584 | fermented_fish | 811 | myristic_acid |
| 1584 | fermented_fish | 827 | 2-methyl-3-butenal |
| 1584 | fermented_fish | 850 | pyrazine |
| 1584 | fermented_fish | 890 | 2,3,5-trimethylpyrazine |
| 1584 | fermented_fish | 893 | 2,3-pentanedione |
| 1584 | fermented_fish | 896 | 2,6,6-trimethylcyclohex-2-ene-1,4-dione |
| 1584 | fermented_fish | 909 | 2-heptanone |
| 1584 | fermented_fish | 912 | indole |
| 1584 | fermented_fish | 918 | 2-pentanone |
| 1584 | fermented_fish | 941 | 3-decanone |
| 1584 | fermented_fish | 943 | (e,e)-3,5-octadien-2-one |
| 1584 | fermented_fish | 980 | 2-pentanol |
| 1584 | fermented_fish | 984 | methyl_disulfide |
| 1584 | fermented_fish | 990 | 5-methylfurfural |
| 1584 | fermented_fish | 1013 | n-valeraldehyde |
| 1584 | fermented_fish | 1028 | taurine |
| 1584 | fermented_fish | 1040 | phenethyl_alcohol |
| 1584 | fermented_fish | 1064 | phenol |

Table- A4. List of flavour compound of fermented soybean

| #ID | Ingredient | Compound ID | Compound name |
|------|-------------------|-------------|-----------------------------|
| 1583 | fermented_soybean | 40 | 2-methylpyrazine |
| 1583 | fermented_soybean | 165 | eugenol |
| 1583 | fermented_soybean | 203 | 1-octen-3-ol |
| 1583 | fermented_soybean | 249 | pyridine |
| 1583 | fermented_soybean | 374 | coumarin |
| 1583 | fermented_soybean | 424 | 2-pentyl furan |
| 1583 | fermented_soybean | 448 | ethyl3-phenylpropionate |
| 1583 | fermented_soybean | 586 | linalool |
| 1583 | fermented_soybean | 671 | acetic_acid |
| 1583 | fermented_soybean | 744 | ethylheptanoate |
| 1583 | fermented_soybean | 750 | ethylhexanoate |
| 1583 | fermented_soybean | 788 | diethyl_succinate |
| 1583 | fermented_soybean | 858 | 5-methyl-2-phenyl-2-hexenal |
| 1583 | fermented_soybean | 879 | ethylpalmitate |
| 1583 | fermented_soybean | 902 | 2-heptanone |
| 1583 | fermented_soybean | 922 | 2-ethyl-1-hexanol |
| 1583 | fermented_soybean | 990 | 5-methylfurfural |
| 1583 | fermented_soybean | 1022 | cinnamaldehyde |
| 1583 | fermented_soybean | 1029 | ethylcinnamate |
| 1583 | fermented_soybean | 1060 | ethylmyristate |
| 1583 | fermented_soybean | 1064 | phenol |
| 1583 | fermented_soybean | 1465 | 1-(2-furanyl)ethanone |
| 1583 | fermented_soybean | 1466 | 1-butanol |
| 1583 | fermented_soybean | 1467 | 1H-pyrrole-2-carboxaldehyde |
| 1583 | fermented_soybean | 1468 | 1-pentanol |
| 1583 | fermented_soybean | 1469 | 1-penten-3-ol |
| 1583 | fermented_soybean | 1470 | 1-propanol |
| 1583 | fermented_soybean | 1471 | 2,3-butanedione |
| 1583 | fermented_soybean | 1472 | 2,3-pentanedione |
| 1583 | fermented_soybean | 1473 | 2,4,6-trimethylpyridine(IS) |
| 1583 | fermented_soybean | 1474 | 2-butoxyethanol |
| 1583 | fermented_soybean | 1475 | 2-furancarboxaldehyde |
| 1583 | fermented_soybean | 1476 | 2-heptanol |
| 1583 | fermented_soybean | 1477 | 2-methoxy-4-vinylphenol |
| 1583 | fermented_soybean | 1478 | 2-methoxyphenol |
| 1583 | fermented_soybean | 1479 | 2-methyl-1-propanol |
| 1583 | fermented_soybean | 1480 | 2-nonanone |
| 1583 | fermented_soybean | 1481 | 2-pentanol |
| 1583 | fermented_soybean | 1482 | 3-(methylthio)propanal |
| 1583 | fermented_soybean | 1483 | 3-(methylthio)propanol |
| 1583 | fermented_soybean | 1484 | 3-ethoxy-1-propanol |
| 1583 | fermented_soybean | 1485 | 3-hydroxy-2-methyl-4-pyrone |
| 1583 | fermented_soybean | 1486 | 3-methyl-1-butanol |
| 1583 | fermented_soybean | 1487 | 3-octanone |

| | | | |
|------|-------------------|------|---------------------------------|
| 1583 | fermented_soybean | 1488 | 3-penten-2-one |
| 1583 | fermented_soybean | 1489 | 4-ethyl-2-methoxyphenol |
| 1583 | fermented_soybean | 1490 | 4-ethylphenol |
| 1583 | fermented_soybean | 1491 | 4-methoxybenzaldehyde |
| 1583 | fermented_soybean | 1492 | 4-methylphenol |
| 1583 | fermented_soybean | 1493 | benaldehyde |
| 1583 | fermented_soybean | 1494 | benzeneethanol |
| 1583 | fermented_soybean | 1495 | dihydro-2(3H)-furanone |
| 1583 | fermented_soybean | 1496 | dihydro-5-methyl-2(3H)-furanone |
| 1583 | fermented_soybean | 1497 | ethyl2-methylbutanoate |
| 1583 | fermented_soybean | 1498 | ethyl3-(methylthio)propanoate |
| 1583 | fermented_soybean | 1499 | ethyl3-methylbutanoate |
| 1583 | fermented_soybean | 1500 | ethylbenzoate |
| 1583 | fermented_soybean | 1501 | ethylbutanoate |
| 1583 | fermented_soybean | 1502 | ethylactate |
| 1583 | fermented_soybean | 1503 | ethyloctanoate |
| 1583 | fermented_soybean | 1504 | ethyloleate |
| 1583 | fermented_soybean | 1505 | ethylphenylacetate |
| 1583 | fermented_soybean | 1506 | isoamylacetate |
| 1583 | fermented_soybean | 1507 | naphthalene |
| 1583 | fermented_soybean | 1508 | n-hexanal |
| 1583 | fermented_soybean | 1509 | tetramethylpyrazine |
| 1583 | fermented_soybean | 1510 | (E)-and(Z)-2-phenyl-2-butenal |
| 1583 | fermented_soybean | 1511 | (E)-anethole |
| 1583 | fermented_soybean | 1512 | 1H-indole |
| 1583 | fermented_soybean | 1513 | 1H-pyrrole |
| 1583 | fermented_soybean | 1514 | 1-hydroxy-2-propanone |
| 1583 | fermented_soybean | 1515 | 2,3-butanediol |
| 1583 | fermented_soybean | 1516 | 2,5-dimethylpyrazine |
| 1583 | fermented_soybean | 1517 | 2,6-dimethylpyrazine |
| 1583 | fermented_soybean | 1518 | 2-acetylpyrrole |
| 1583 | fermented_soybean | 1519 | 2-butanol |
| 1583 | fermented_soybean | 1520 | 2-furanmethanol |
| 1583 | fermented_soybean | 1521 | 2-methyl-1H-pyrrole |
| 1583 | fermented_soybean | 1522 | 3-hydroxy-2-butanone |
| 1583 | fermented_soybean | 1523 | 3-phenyl-2-propenol |
| 1583 | fermented_soybean | 1524 | benzeneacetaldehyde |
| 1583 | fermented_soybean | 1525 | benzenemethanol |
| 1583 | fermented_soybean | 1526 | dihydro-5-pentyl-2(3H)-furanone |
| 1583 | fermented_soybean | 1527 | ethanol |
| 1583 | fermented_soybean | 1528 | ethy 2-butenate |
| 1583 | fermented_soybean | 1529 | ethyl 2-methylpropanoate |
| 1583 | fermented_soybean | 1530 | ethyl3-hydroxybutanoate |
| 1583 | fermented_soybean | 1531 | ethylinoleate |
| 1583 | fermented_soybean | 1532 | ethylinolenate |
| 1583 | fermented_soybean | 1533 | ethylpentanoate |

Table- A5. List of flavour compound of fermented bamboo shoot

| #ID | Ingredient | Compound ID | Compound name |
|------|------------------------|-------------|--|
| 1586 | fermented_bamboo_shoot | 203 | 1-octen-3-ol |
| 1586 | fermented_bamboo_shoot | 204 | p-cresol |
| 1586 | fermented_bamboo_shoot | 215 | benzoic acid, 2-hydroxy-, methyl ester |
| 1586 | fermented_bamboo_shoot | 235 | hexanal |
| 1586 | fermented_bamboo_shoot | 243 | hexanoic acid |
| 1586 | fermented_bamboo_shoot | 292 | 1-octanol |
| 1586 | fermented_bamboo_shoot | 311 | 2-octanol |
| 1586 | fermented_bamboo_shoot | 397 | 6-methyl-5-hepten-2-one |
| 1586 | fermented_bamboo_shoot | 424 | 2-pentylfuran |
| 1586 | fermented_bamboo_shoot | 517 | 4-ethylbenzaldehyde |
| 1586 | fermented_bamboo_shoot | 554 | nonanal |
| 1586 | fermented_bamboo_shoot | 586 | linalool |
| 1586 | fermented_bamboo_shoot | 649 | 4-ethylguaiaicol |
| 1586 | fermented_bamboo_shoot | 657 | octanal |
| 1586 | fermented_bamboo_shoot | 671 | acetic acid |
| 1586 | fermented_bamboo_shoot | 756 | 3-octanol |
| 1586 | fermented_bamboo_shoot | 922 | 2-ethyl-1-hexanol |
| 1586 | fermented_bamboo_shoot | 974 | acetaldehyde |
| 1586 | fermented_bamboo_shoot | 976 | allyl disulfide |
| 1586 | fermented_bamboo_shoot | 1027 | cyclopentanone |
| 1586 | fermented_bamboo_shoot | 1045 | heptanal |
| 1586 | fermented_bamboo_shoot | 1064 | phenol |
| 1586 | fermented_bamboo_shoot | 1070 | benzaldehyde |
| 1586 | fermented_bamboo_shoot | 1476 | 2-heptanol |
| 1586 | fermented_bamboo_shoot | 1494 | benzeneethanol |
| 1586 | fermented_bamboo_shoot | 1507 | naphthalene |
| 1586 | fermented_bamboo_shoot | 1519 | 2-butanol |
| 1586 | fermented_bamboo_shoot | 1527 | ethanol |
| 1586 | fermented_bamboo_shoot | 1534 | dimethyl sulfide |
| 1586 | fermented_bamboo_shoot | 1535 | acetic acid, methyl ester |
| 1586 | fermented_bamboo_shoot | 1536 | acetic acid, ethyl ester |
| 1586 | fermented_bamboo_shoot | 1537 | dichloromethane |
| 1586 | fermented_bamboo_shoot | 1538 | pentanal |
| 1586 | fermented_bamboo_shoot | 1539 | ethyl 2-methylbutanoate |
| 1586 | fermented_bamboo_shoot | 1540 | d,l-limonene |
| 1586 | fermented_bamboo_shoot | 1541 | cyclopentanol |
| 1586 | fermented_bamboo_shoot | 1542 | (Z)-2-heptenal |
| 1586 | fermented_bamboo_shoot | 1543 | 1-hexanol |
| 1586 | fermented_bamboo_shoot | 1544 | cyclopentanol |
| 1586 | fermented_bamboo_shoot | 1545 | (Z)-2-heptenal |
| 1586 | fermented_bamboo_shoot | 1546 | cyclohexanol |
| 1586 | fermented_bamboo_shoot | 1547 | heptanol |
| 1586 | fermented_bamboo_shoot | 1548 | methional |
| 1586 | fermented_bamboo_shoot | 1549 | propanoic acid |
| 1586 | fermented_bamboo_shoot | 1550 | (Z)-2-nonenal |
| 1586 | fermented_bamboo_shoot | 1551 | 2(3H)-furanone, dihydro |
| 1586 | fermented_bamboo_shoot | 1552 | (E,Z)-2,6-nonadienal |
| 1586 | fermented_bamboo_shoot | 1553 | 1-phenyl ethanol |

| | | | |
|------|------------------------|------|----------------------------------|
| 1586 | fermented_bamboo_shoot | 1554 | 2-furan methanol |
| 1586 | fermented_bamboo_shoot | 1555 | benzene, 1-methoxy-4(2-propenyl) |
| 1586 | fermented_bamboo_shoot | 1556 | pentanoic acid |
| 1586 | fermented_bamboo_shoot | 1557 | benzene methanol |
| 1586 | fermented_bamboo_shoot | 1558 | 3-methoxy-2-butanol |
| 1586 | fermented_bamboo_shoot | 1559 | 2-methoxy-4-cresol |
| 1586 | fermented_bamboo_shoot | 1560 | phenyl acetaldehyde |
| 1586 | fermented_bamboo_shoot | 1561 | 3-ethylphenol |

Table-A6. Sensory analysis comparison between Recipe A and Recipe B

Hedonic rating test

Name:

Date

Recipe:

Taste the sample and check how much you like or dislike each one. Use the appropriate scale to show your attitude by checking at the point that best describe your feeling about the sample. Please give a reason for this attitude. Remember, you are the only one who can tell what you like. An honest expression of your personal feeling will help us.

- | | code | code |
|-----------------------------|------|------|
| 9. like extremely | | |
| 8. like very much | | |
| 7. like moderately | | |
| 6. like slightly | | |
| 5. neither like nor dislike | | |
| 4. dislike slightly | | |
| 3. dislike moderately | | |
| 2. dislike very much | | |
| 1. dislike extremely | | |

Reason:

Signature

Table A7 (a) Top five prevalent ingredients of regional cuisines. (This Table also defines the abbreviated forms of prevalent ingredients to be used in later representations as well)

| Cuisine name | Ingredients | Prevalence | No of flavour compounds |
|---------------------|-------------------------------|-------------------|--------------------------------|
| Assam | black mustard seed oil (MOIL) | 0.920 | 1 |
| | onion (ONIN) | 0.493 | 58 |
| | turmeric (TRMC) | 0.488 | 10 |
| | green bell pepper (PEPP) | 0.478 | 37 |
| | cayenne (CAYN) | 0.319 | 39 |
| Arunachal | cayenne (CAYN) | 0.333 | 39 |
| | green bell pepper (PEPP) | 0.333 | 37 |
| | ginger (GNGR) | 0.309 | 86 |
| | black mustard seed oil (MOIL) | 0.261 | 1 |
| | onion (ONIN) | 0.238 | 58 |
| Manipur | onion (ONIN) | 0.605 | 58 |
| | black mustard seed oil (MOIL) | 0.578 | 1 |
| | cayenne (CAYN) | 0.447 | 39 |
| | ginger (GNGR) | 0.421 | 86 |
| | bay laurel (BAYL) | 0.368 | 4 |
| Meghalaya | onion (ONIN) | 0.617 | 58 |
| | green bell pepper (PEPP) | 0.470 | 37 |
| | black mustard seed oil (MOIL) | 0.441 | 1 |
| | ginger (GNGR) | 0.441 | 86 |
| | pork (PORK) | 0.382 | 115 |
| Mizoram | black mustard seed oil (MOIL) | 0.342 | 1 |
| | rice (RICE) | 0.285 | 74 |
| | onion (ONIN) | 0.257 | 58 |
| | cayenne (CAYN) | 0.228 | 39 |
| | ginger (GNGR) | 0.228 | 86 |
| Nagaland | cayenne (CAYN) | 0.581 | 39 |
| | garlic (GRLC) | 0.488 | 21 |
| | ginger (GNGR) | 0.441 | 86 |
| | green bell pepper (PEPP) | 0.418 | 37 |
| | tomato (TMTO) | 0.302 | 150 |
| Sikkim | black mustard seed oil (MOIL) | 0.557 | 1 |
| | onion (ONIN) | 0.480 | 58 |
| | cayenne (CAYN) | 0.326 | 39 |
| | green bell pepper (PEPP) | 0.326 | 37 |
| | turmeric (TRMC) | 0.307 | 10 |
| Tripura | green bell pepper (PEPP) | 0.642 | 37 |
| | onion (ONIN) | 0.571 | 58 |
| | garlic (GRLC) | 0.392 | 21 |
| | ginger (GNGR) | 0.392 | 86 |
| | black mustard seed oil (MOIL) | 0.25 | 1 |

Table A7 (b) Top 10 prevalent ingredients of Northeast cuisines (NE) combined. Their prevalence values (within top 05) from Table 4.5 (a) also included for a comparison. Ingredient names as defined in table 4.5 (a) are used

| Ingredient | NE | Prevalence value within the regional cuisines | | | | | | | |
|------------|------|---|-----------|---------|-----------|---------|----------|--------|---------|
| | | Assam | Arunachal | Manipur | Meghalaya | Mizoram | Nagaland | Sikkim | Tripura |
| MOIL | 0.69 | 0.92 | 0.26 | 0.58 | 0.44 | 0.34 | 0.09 | 0.56 | 0.25 |
| ONIN | 0.46 | 0.49 | 0.24 | 0.61 | 0.62 | 0.26 | 0.23 | 0.48 | 0.57 |
| PEPP | 0.43 | 0.48 | 0.33 | 0.21 | 0.47 | 0.2 | 0.42 | 0.33 | 0.64 |
| TRMC | 0.35 | 0.49 | 0.04 | 0.28 | 0.28 | 0.08 | 0.02 | 0.31 | 0.21 |
| CAYN | 0.32 | 0.32 | 0.33 | 0.45 | 0.44 | 0.23 | 0.58 | 0.33 | 0.14 |
| GNGR | 0.27 | 0.23 | 0.31 | 0.42 | 0.44 | 0.23 | 0.44 | 0.21 | 0.39 |
| RICE | 0.21 | 0.23 | 0.11 | 0.26 | 0.26 | 0.29 | 0.09 | 0.15 | 0.10 |
| BAYL | 0.19 | 0.26 | - | 0.37 | 0.36 | 0.02 | 0.02 | 0.01 | 0.03 |
| PORK | 0.12 | 0.07 | 0.23 | 0.02 | 0.38 | 0.14 | 0.23 | 0.17 | 0.25 |
| GRLC | 0.07 | 0.29 | 0.19 | 0.28 | 0.28 | 0.14 | 0.49 | 0.13 | 0.39 |

Table-A8 List of top five authentic ingredient, ingredient pair, and triplet.

Ingredient names as defined in table 4.4 (a) are used

| Cuisine name | Col-1 | Col-2 | Col-3 |
|---------------------|-------------------|------------------------|----------------------------|
| | Ingredient | Ingredient Pair | Ingredient Triplet |
| Assam | MOIL | MOIL, ONIN | MOIL, ONIN, TRMC |
| | ONIN | MOIL, TRMC | MOIL, ONIN, PEPP |
| | PEPP | MOIL, PEPP | MOIL, TRMC, PEPP |
| | TRMC | ONIN, PEPP | MOIL, TRMC, BAYL |
| | GRLC | ONIN, TRMC | ONIN, TRMC, PEPP |
| Arunachal | PEPP | PEPP, GNGR | MOIL, ONIN, tomato |
| | GNGR | MOIL, ONIN, | PEPP, GNGR, GRLC |
| | CAYN | MOIL, tomato | cabbage, bean, carrot |
| | MOIL | ONIN, tomato | bean, coriander, carrot |
| Manipur | PORK | PORK, bamboo shoot | cabbage, coriander, carrot |
| | ONIN | ONIN, MOIL | ONIN, GNGR, GRLC |
| | MOIL | MOIL, BAYL | ONIN, MOIL, cumin |
| | CAYN | MOIL, TRMC | ONIN, MOIL, GRLC |
| | GNGR | ONIN, CAYN | ONIN, MOIL, TRMC |
| Meghalaya | BAYL | MOIL, GRLC | ONIN, MOIL, GNGR |
| | ONIN | ONIN, GNGR | ONIN, MOIL, GRLC |
| | PEPP | ONIN, MOIL | ONIN, GRLC, sesame seed |
| | GNGR | ONIN, PEPP | ONIN, PORK, GRLC |
| | MOIL | ONIN, GRLC | ONIN, GNGR, PORK |
| Mizoram | PORK | PEPP, GNGR | ONIN, GNGR, MOIL |
| | MOIL | MOIL, ONIN | MOIL, GNGR, GRLC |
| | RICE | GNGR, GRLC | MOIL, ONIN, GNGR |
| | ONIN | ONIN, GNGR | ONIN, GNGR, GRLC |
| | GNGR | MOIL, GNGR | MOIL, ONIN, TRMC |
| Nagaland | CAYN | MOIL, GRLC | GNGR, CAYN, GRLC |
| | CAYN | CAYN, GRLC | CAYN, GRLC, GNGR |
| | GRLC | GRLC, GNGR | GRLC, GNGR, PEPP |
| | GNGR | GNGR, PEPP | GRLC, GNGR, bamboo shoot |
| | PEPP | CAYN, GNGR | CAYN, GNGR, PORK |
| Sikkim | tomato | GRLC, PEPP | GRLC, GNGR, tomato |
| | ONIN | ONIN, MOIL | ONIN, MOIL, PEPP |
| | MOIL | ONIN, PEPP | ONIN, TRMC, tomato |
| | PEPP | ONIN, tomato | ONIN, PEPP, GNGR |
| | CAYN | MOIL, CAYN | ONIN, MOIL, GNGR |
| Tripura | TRMC | ONIN, TRMC | ONIN, MOIL, TRMC |
| | PEPP | PEPP, ONIN | PEPP, ONIN, GRLC |
| | ONIN | PEPP, GRLC | PEPP, ONIN, GNGR |
| | GNGR | ONIN, GRLC | PEPP, ONIN, fermented fish |
| | GRLC | PEPP, GNGR | ONIN, GNGR, PORK |
| Tripura | PORK | ONIN, GNGR | PEPP, GRLC, fish |

Table-A9 Shared flavour compounds between the authentic ingredient pair and triplets of Northeast cuisine Ingredient names as defined in table 4.4(a) are used

| Regional cuisine | Authentic ingredient pair | Number of shared flavour compounds | Authentic ingredient triplet | Number of shared flavour compounds |
|------------------|---------------------------|------------------------------------|------------------------------|------------------------------------|
| Assam | MOIL+ ONIN | 1 | MOIL+ ONIN+ TRMC | 1 |
| | MOIL+ TRMC | 0 | MOIL+ ONIN+ PEPP | 1 |
| | MOIL+ PEPP | 0 | MOIL+ TRMC+ PEPP | 0 |
| | ONIN+ PEPP | 0 | MOIL+ TRMC+ BAYL | 0 |
| | ONIN, TRMC | 0 | ONIN+ TRMC+ PEPP | 0 |
| Arunachal | PEPP+ GNDR | 16 | MOIL+ ONIN+ tomato | 1 |
| | MOIL+ ONIN, | 1 | PEPP+ GNDR+ GRCL | 16, 1 |
| | MOIL+ tomato | 0 | cabbage+ bean+ carrot | 10, 17 |
| | ONIN+ tomato | 20 | bean+ coriander+ carrot | 17 |
| | PORK+ bamboo shoot | 10 | cabbage, coriander, carrot | 14 |
| Manipur | ONIN+ MOIL | 1 | ONIN+ GNDR+ GRCL | 8, 16, 2 |
| | MOIL+ BAYL | 0 | ONIN+ MOIL+ cumin | 1 |
| | MOIL+ TRMC | 0 | ONIN+ MOIL+ GRCL | 1 |
| | ONIN+ CAYN | 0 | ONIN+ MOIL+ TRMC | 1 |
| | MOIL+ GRCL | 0 | ONIN+ MOIL+ GNDR | 1 |
| Meghalaya | ONIN+ GNDR | 8 | ONIN+ MOIL+ GRCL | 1 |
| | ONIN+ MOIL | 1 | ONIN+ GRCL+ sesame seed | 16, 4 |
| | ONIN+ PEPP | 0 | ONIN+ PORK+ GRCL | 16, 5 |
| | ONIN+ GRCL | 16 | ONIN+ GNDR+ PORK | 8 |
| | PEPP+ GNDR | 16 | ONIN+ GNDR+ MOIL | 8, 1 |
| Mizoram | MOIL+ ONIN | 1 | MOIL+ GNDR+ GRCL | 0 |
| | GNDR+ GRCL | 2 | MOIL+ ONIN+ GNDR | 1 |
| | ONIN+ GNDR | 8 | ONIN+ GNDR+ GRCL | 8, 16, 2 |
| | MOIL+ GNDR | 0 | MOIL+ ONIN+ TRMC | 1 |
| | MOIL+ GRCL | 0 | GNDR+ CAYN+ GRCL | 16, 2 |
| Nagaland | CAYN+ GRCL | 0 | CAYN+ GRCL+ GNDR | 16, 2 |
| | GRCL+ GNDR | 2 | GRCL+ GNDR+ PEPP | 2, 1, 16 |
| | GNDR+ PEPP | 16 | GRCL+ GNDR+ bamboo shoot | 2, 1, 8 |
| | CAYN+ GNDR | 16 | CAYN+ GNDR+ PORK | 16, 22 |
| | GRCL+ PEPP | 1 | GRCL+ GNDR+ tomato | 2 |
| Sikkim | ONIN+ MOIL | 1 | ONIN+ MOIL+ PEPP | 1 |
| | ONIN+ PEPP | 0 | ONIN+ TRMC+ tomato | 20 |
| | ONIN+ tomato | 20 | ONIN+ PEPP+ GNDR | 16 |
| | MOIL+ CAYN | 0 | ONIN+ MOIL+ GNDR | 1 |
| | ONIN+ TRMC | 0 | ONIN+ MOIL+ TRMC | 1 |
| Tripura | PEPP+ ONIN | 0 | PEPP+ ONIN+ GRCL | 16 |
| | PEPP+ GRCL | 1 | PEPP+ ONIN+ GNDR | 16, 8 |
| | ONIN+ GRCL | 16 | PEPP+ ONIN+ fermented fish | 12 |
| | PEPP+ GNDR | 16 | ONIN+ GNDR+ PORK | 8, 22 |
| | ONIN+ GNDR | 8 | PEPP+ GRCL+ fish | 1, 1 |

Table-A10 List of top 5 ingredients contributing to positive and negative food pairing

| Region | Contribution (χ_i) | | | | | |
|-----------|---------------------------|----------------|------------|------------------------|----------------|------------|
| | Positive | χ_i value | Prevalence | Negative | χ_i value | Prevalence |
| Assam | rice | 0.776 | 0.234 | black mustard seed oil | -1.397 | 0.920 |
| | milk | 0.510 | 0.094 | garlic | -0.441 | 0.291 |
| | ginger | 0.351 | 0.236 | bay laurel | -0.372 | 0.269327 |
| | tomato | 0.347 | 0.109 | turmeric | -0.258 | 0.488 |
| | coriander | 0.235 | 0.219 | onion | -0.227 | 0.493 |
| Arunachal | milk | 1.601 | 0.047 | black mustard seed oil | -1.123 | 0.261 |
| | tea | 1.555 | 0.023 | corn grit | -1.119 | 0.071 |
| | rice | 0.990 | 0.119 | green bell pepper | -0.844 | 0.333 |
| | pork | 0.960 | 0.238 | cayenne | -0.602 | 0.333 |
| | chicken | 0.835 | 0.214 | garlic | -0.474 | 0.190 |
| Manipur | rice | 0.756 | 0.263 | black mustard seed oil | -0.778 | 0.578 |
| | milk | 0.586 | 0.157 | bay laurel | -0.564 | 0.368 |
| | tomato | 0.425 | 0.210 | ghee | -0.551 | 0.131 |
| | potato | 0.416 | 0.210 | chickpea | -0.413 | 0.131 |
| | mushroom | 0.311 | 0.105 | cabbage | -0.369 | 0.078 |
| Meghalaya | rice | 1.994 | 0.264 | black mustard seed oil | -1.389 | 0.441 |
| | pork | 1.576 | 0.382 | cayenne | -0.764 | 0.176 |
| | ginger | 1.031 | 0.441 | garlic | -0.535 | 0.323 |
| | coconut | 0.626 | 0.029 | green bell pepper | -0.529 | 0.470 |
| | beef | 0.338 | 0.029 | fish | -0.421 | 0.235 |
| Mizoram | rice | 1.151 | 0.285 | black mustard seed oil | -0.993 | 0.342 |
| | ginger | 0.597 | 0.228 | onion | -0.500 | 0.257 |
| | chicken | 0.562 | 0.171 | garlic | -0.423 | 0.142 |
| | cauliflower | 0.367 | 0.057 | green bell pepper | -0.395 | 0.2 |
| Nagaland | pork | 0.285 | 0.142 | corn grit | -0.276 | 0.085 |
| | tomato | 1.282 | 0.302 | garlic | -1.322 | 0.488 |
| | ginger | 1.051 | 0.441 | cayenne | -1.173 | 0.581 |
| | potato | 0.495 | 0.093 | green bell pepper | -0.891 | 0.418 |
| | chicken | 0.386 | 0.139 | mustard greens oil | -0.568 | 0.139 |
| | pork | 0.381 | 0.232 | fermented soybean | -0.395 | 0.13 |
| Sikkim | butter | 2.563 | 0.076 | black mustard seed oil | -1.461 | 0.557 |
| | tomato | 1.351 | 0.269 | turmeric | -0.592 | 0.307 |
| | rice | 1.272 | 0.153 | onion | -0.448 | 0.480 |
| | mushroom | 0.990 | 0.019 | corn grit | -0.234 | 0.019 |
| | beef | 0.644 | 0.076 | clove | -0.183 | 0.057 |
| Tripura | pork | 1.221 | 0.25 | green bell pepper | -1.506 | 0.642 |
| | fermented fish | 0.940 | 0.25 | garlic | -0.866 | 0.392 |
| | ginger | 0.910 | 0.392 | black mustard seed oil | -0.677 | 0.25 |
| | french bean | 0.512 | 0.142 | turmeric | -0.507 | 0.214 |
| | tomato | 0.399 | 0.107 | ghee | -0.187 | 0.0357 |

Table-A11 Similar recipes with cosine similarity value 1 of Northeast regional cuisine

| Recipe name/ID | Names of ingredients | Similar recipe name | Names of ingredients | No of common ingredients | Names of common ingredients | No of unique ingredients | Names of unique ingredients |
|-----------------------------------|---|--------------------------------------|---|---------------------------------|---|---------------------------------|------------------------------------|
| ari fish fry | ari fish, black mustard seed oil, turmeric, bay laurel | chital fish fry | chital fish, black mustard seed oil, turmeric, bay laurel | 3 | black mustard seed oil, turmeric, bay laurel | 1 | chital fish |
| ari fish with mustard seed | ari fish, black mustard seed oil, turmeric, onion, ginger garlic paste, cayenne, green bell pepper, bay laurel, cumin, black pepper | pabha fish with mustard seed | pabha fish, black mustard seed oil, turmeric, onion, ginger garlic paste, cayenne, green bell pepper, bay laurel, cumin, black pepper | 9 | turmeric, onion, ginger garlic paste, cayenne, green bell pepper, black mustard seed oil, bay laurel, cumin, black pepper | 1 | pabha fish |
| ari fish with ou tenga | ari fish, ou tenga, garcinia indica, bamboo shoot, potato, turmeric, black mustard seed oil, coriander | chital fish with ou tenga | chital fish, ou tenga, garcinia indica, bamboo shoot, potato, turmeric, black mustard seed oil, coriander | 7 | ou tenga, garcinia indica, bamboo shoot, potato, turmeric, black mustard seed oil, coriander | 1 | chital fish |
| ari fish wrapped in banana leaves | ari fish, banana, black mustard seed oil, green bell pepper, turmeric | borali fish wrapped in banana leaves | borali fish, banana, black mustard seed oil, green bell pepper, turmeric | 4 | banana, black mustard seed oil, green bell pepper, turmeric | 1 | borali fish |
| bhokuwa fish | bhoku wa fish, black mustard seed oil, turmeric, onion, ginger garlic paste, cayenne, green bell | hilsa fish | hilsa fish, black mustard seed oil, turmeric, onion, ginger garlic paste, cayenne, green bell | 9 | black mustard seed oil, turmeric, onion, ginger garlic paste, cayenne, green bell pepper, bay | | hilsa fish |

| | | | | | | | |
|--------------------|--|--------------------------|---|----|---|---|---------------------------|
| | pepper, bay laurel, cumin, black pepper | | pepper, bay laurel, cumin, black pepper] | | laurel, cumin, black pepper | | |
| black gram | black bean, black mustard seed oil, bay laurel, panch phoron seeds, garlic, onion, green bell pepper, turmeric, cayenne | black gram with ou_tenga | ou tenga, black bean, black mustard seed oil, bay laurel, panch phoron seeds, garlic, onion, green bell pepper, turmeric, cayenne | 9 | black bean, black mustard seed oil, bay laurel, panch phoron seeds, garlic, onion, green bell pepper, turmeric, cayenne | 1 | ou tenga (elephant apple) |
| chicken curry | chicken, black mustard seed oil, ginger garlic paste, turmeric, lemon | chicken khorikaa | chicken, black mustard seed oil, ginger garlic paste, turmeric, lemon | 5 | chicken, black mustard seed oil, ginger garlic paste, turmeric, lemon | 0 | - |
| chicken with herbs | chicken, black mustard seed oil, black pepper, turmeric, potato, green bell pepper, bay laurel, cumin, ginger garlic paste, onion, herbs | chicken with pepper | chicken, black mustard seed oil, black pepper, turmeric, potato, green bell pepper, bay laurel, cumin, ginger garlic paste, onion | 10 | chicken, black mustard seed oil, black pepper, turmeric, potato, green bell pepper, bay laurel, cumin, ginger garlic paste, onion | 1 | herbs |
| duck meat fried | duck, onion, turmeric, green bell pepper, black mustard seed oil, ginger garlic paste, cumin, bay laurel, black pepper | duck with white gourd | duck, onion, turmeric, green bell pepper, black mustard seed oil, ginger garlic paste, cumin, bay laurel, black pepper, white gourd | 9 | duck, onion, turmeric, green bell pepper, black mustard seed oil, ginger garlic paste, cumin, bay laurel, black pepper | 1 | white gourd |

| | | | | | | | |
|-----------------------------|--|----------------------------|---|---|--|---|-------------|
| duck with potato | duck, onion, turmeric, green bell pepper, black mustard seed oil, ginger garlic paste, cumin, bay laurel, black pepper, potato | pigeon with potato | pigeon meat, onion, turmeric, green bell pepper, black mustard seed oil, ginger garlic paste, black pepper, cumin, bay laurel, potato | 9 | onion, turmeric, green bell pepper, black mustard seed oil, ginger garlic paste, cumin, bay laurel, black pepper, potato | 1 | pigeon meat |
| ghila pitha (fried pancake) | rice, jaggery, black mustard seed oil | phula pitha (puffed pitha) | rice, jaggery, orange, black mustard seed oil | 3 | rice, jaggery, black mustard seed oil | 1 | orange |
| kharoli (mustard chutney) | black mustard seed oil, banana | koat pitha (assam) | banana, jaggery, black mustard seed oil | 2 | black mustard seed oil, banana | 1 | jaggery |
| pork meat fried | pork, onion, turmeric, green bell pepper, black mustard seed oil, ginger garlic paste, black pepper, cumin, bay laurel | pork with lai xaak | pork, onion, turmeric, green bell pepper, black mustard seed oil, ginger garlic paste, black pepper, cumin, bay laurel, lai xaak | 9 | pork, onion, turmeric, green bell pepper, black mustard seed oil, ginger garlic paste, black pepper, cumin, bay laurel | 1 | lai xaak |
| pork with ou tenga | pork, onion, turmeric, green bell pepper, black mustard seed oil, ginger garlic paste, black pepper, cumin, bay laurel, ou tenga | pork with lai xaak | pork, onion, turmeric, green bell pepper, black mustard seed oil, ginger garlic paste, black pepper, cumin, bay laurel, lai xaak | 9 | pork, onion, turmeric, green bell pepper, black mustard seed oil, ginger garlic paste, black pepper, cumin, bay laurel, | 1 | lai xaak |
| dohkhlieh | pork, onion, ginger, green bell pepper | wookhan (pork stew) | pork, green bell pepper, onion, ginger | 4 | pork, onion, ginger, green bell pepper | 0 | |

Table-A12 Similar recipes with cosine similarity value ranging from 0.9 to 0.8 of Northeast regional cuisine

| Recipe name/ID | Names of ingredients | Similar recipe name | Names of ingredients | No of common ingredients | Names of common ingredients | No of unique ingredients | Names of unique ingredients |
|---|--|------------------------------------|---|---------------------------------|---|---------------------------------|--|
| pork and fermented bamboo | pork, black mustard seed oil, green bell pepper, onion, ginger, garlic, turmeric, fermented bamboo shoot | chikhvi | fermented bamboo shoot, pork | 2 | fermented bamboo shoot, pork | 5 | black mustard seed oil, green bell pepper, onion, ginger, garlic, turmeric |
| duck meat fried | duck, onion, turmeric, green bell pepper, black mustard seed oil, ginger garlic paste, cumin, bay laurel, black pepper | bhokuwa fish | bhokuwa fish, black mustard seed oil, turmeric, onion, ginger garlic paste, cayenne, green bell pepper, bay laurel, cumin, black pepper | 8 | black mustard seed oil, turmeric, onion, ginger garlic paste, bay laurel, cumin, black pepper, green bell pepper, | 2 | bhokuwa fish, cayenne, |
| assamese chicken fry/kukurar bhaji | chicken, poppyseed, onion, black mustard seed oil, cardamom, turmeric, cayenne, bay laurel, ghee | kukurar bhaji (chicken fry) | chicken, onion, poppyseed, raisin, black mustard seed oil, cardamom, bay laurel, cayenne, turmeric, ghee | 8 | chicken, onion, poppyseed, black mustard seed oil, cardamom, bay laurel, turmeric, ghee | 2 | raisin, cayenne |
| baanhgajor lagot kukura (chicken with bamboo shoot) | chicken, ginger, garlic, turmeric, coriander, cumin, black mustard seed oil, onion, green bell pepper, bamboo shoot | amerso (chicken with bamboo shoot) | chicken, bamboo shoot, rice, green bell pepper, ginger, garlic | 5 | chicken, bamboo shoot, green bell pepper, ginger, garlic | 5 | turmeric, coriander, cumin, black mustard seed oil, onion |

| | | | | | | | |
|-------------------------------------|---|--|---|---|---|---|--|
| smoked pork with bamboo shoot | pork, green bell pepper, bamboo shoot | pika pila | bamboo shoot, pork, cayenne | 2 | pork, bamboo shoot | 2 | cayenne, green bell pepper |
| bhator payas (chilled rice pudding) | rice, milk, butter, bay laurel, lemon | patisapta pitha (pancake roll) | wheat, rice, milk, butter, coconut, lemon | 4 | rice, milk, butter, lemon | 3 | wheat, coconut |
| bootor daali | chickpea, lentil, pepper, cumin, onion, turmeric, ginger, garlic, bay laurel, coriander, black mustard seed oil | paro manxor jhul (pigeon curry) | pigeon meat, black mustard seed oil, onion, ginger, garlic, green bell pepper, coriander, cumin, turmeric, pepper | 8 | black mustard seed oil, onion, ginger, garlic, coriander, cumin, turmeric, pepper | 4 | chickpea, pigeon meat, lentil, bay laurel |
| jhalmuri (assam) | rice, green bell pepper, onion, coriander, tomato, black mustard seed oil | masur dailor bor (red, lentil pakoras) | lentil, rice, coriander, onion, tomato, green bell pepper, black mustard seed oil | 5 | green bell pepper, onion, coriander, tomato, black mustard seed oil | 2 | rice, lentil |
| masoor daal chutney | lentil, green bell pepper, onion, black mustard seed oil | tel phuit khar | khar, black mustard seed oil, onion, cayenne | 2 | black mustard seed oil, onion | 2 | lentil, green bell pepper, khar |
| akhuni (fermented soya beans) | mustard greens oil, fermented soybean, green bell pepper, tomato | pehak | fermented soybean, cayenne | 1 | fermented soybean | 4 | mustard greens oil, green bell pepper, tomato, cayenne |

Table A13. List of top five similar recipes

| Northeast recipe with ingredients | Western recipe ID with ingredients | Similar ingredients | Cosine similarity value |
|---|---|--------------------------------|--------------------------------|
| Caramel pudding [egg, milk, vanilla oil, black mustard seed oil, butter] | Western_92 [butter, wheat, rum, yeast, cinnamon, sweet potato, egg, milk, cream] | milk, butter, egg | 0.97 |
| cornflour mitha ahar (cornflour pudding) [milk, cocoa, corn grit, vanilla oil, cream, cocoa] | W012 [butter, cocoa, wheat, raisin, milk] | milk, cocoa | 0.96 |
| khoo di (buckwheat roll with spinach and cheese stuffing) [buckwheat, spinach, cottage cheese, onion, tomato, black mustard seed oil, turmeric] | W063 [tomato, wheat, beef, black pepper, bacon, cumin, lettuce, bell pepper, chicken, bread, egg, cayenne] | tomato | 0.84 |
| bhator payas (chilled rice pudding) [rice, milk, butter, bay laurel, lemon] | W182 [cocoa, butter, wheat, egg] | butter | 0.7 |
| alu-koni pitika (mashed egg with potatoes) [egg, potato, cayenne, onion, black mustard seed oil, coriander] | W035 [ham, onion, black pepper, vegetable oil, cabbage, egg, pea] | onion | 0.76 |
| arsa pok (chicken stew) [chicken, rice, ginger, green bell pepper] | EAR40 [black pepper, ginger, scallion, garlic, chicken, rice] | chicken, rice, ginger | 0.97 |
| tukuluk lun (liver chutney) [pork, ginger, cayenne, cayenne] | EAR17 [pork, wheat, sesame oil, soy sauce, black pepper, ginger, scallion, nira] | pork, ginger | 0.96 |
| dawlrep bai [pork, cayenne, garlic, ginger, soybean] | EAR934 [pork, sesame oil, onion, cayenne, ginger, scallion, bone oil, garlic, soybean] | pork, cayenne, ginger, soybean | 0.96 |
| thampa (roasted rice powder) [rice, butter] | EAR926 [butter, sake, soy sauce, black pepper, rice, octopus] | rice, butter | 0.94 |
| etoh (chicken stew with ginger) [chicken, ginger, cayenne] | EAR56 [soy sauce, roasted sesame seed, cayenne, soy sauce, black pepper, ginger, scallion, garlic, vegetable, vegetable oil, chicken] | chicken, ginger, cayenne | 0.92 |

Table A14. Cosine similarity table of the recommended recipe set

| Region | New Recipe | Recipe name | Flavour cosine similarity |
|-----------|---|--|---------------------------|
| ASSAM | [black mustard seed oil, green bell pepper, cauliflower, fenugreek, garcinia indica, ginger garlic paste] | Goose berry chutney (amlokir chutney) | 0.79 |
| | | Patot diya illish maach (wrapped illish) | 0.73 |
| | | Bhoja haanh (duck fry) | 0.71 |
| | | Tiyahor khar (cucumber khar) | 0.71 |
| | | Mati dailor khar (black gram khar) | 0.70 |
| Arunachal | [green bell pepper, ginger, garlic, coriander oil] | Paa chauu (boiled fish) | 0.80 |
| | | Karela chutney (bitter gourd chutney) | 0.79 |
| | | Aso adin (mutton stew with ginger) | 0.74 |
| | | Fish stew | 0.69 |
| | | Etoh (chicken stew with ginger) | 0.69 |
| Manipur | [onion, ginger, garlic, black bean, garcinia indica, ghee, ginger garlic paste] | Ja dai | 0.78 |
| | | Chamthong | 0.72 |
| | | Ooti (dried green pea curry) | 0.70 |
| | | Manipuri khichdi | 0.68 |
| | | Kelichana angouba | 0.68 |
| Meghalaya | [onion, garlic, sesame seed, basil, black bean, black mustard seed oil, cauliflower] | Dohneiong (pork with black sesame seeds) | 0.85 |
| | | Doh sein (pork with black sesame) | 0.54 |
| | | Doh jem (pork with sesame seeds) | 0.51 |
| | | Wak al galda (pork with sorrel leaves) | 0.51 |
| | | Mylliem syiar (chicken curry with black sesame) | 0.48 |
| Mizoram | [black mustard seed oil, ginger, garlic egg, fish, ginger garlic paste] | Nga kan (deep fried fish) | 0.62 |
| | | Ar sawhchhiar (chicken congee) | 0.61 |
| | | Arsa beipenek (spicy chicken stew) | 0.60 |
| | | Mizoran-sanpiau | 0.59 |
| | | Hmarcha rawt (chilli chutney) | 0.58 |
| Nagaland | [cayenne, garlic, ginger, fermented fish] | Dried fish chutney | 0.77 |
| | | Dried fish chutney with green chillies | 0.73 |
| | | Anishi (dried Colocasia leaves with naga hearbs) | 0.66 |
| | | NArecipe1 | 0.64 |
| | | Tukulul lun (liver chutney) | 0.63 |
| Sikkim | [onion, black mustard seed oil, green bell pepper, cauliflower, ghee] | Sidra ko chutney | 0.67 |
| | | Sidra ko chutney | 0.67 |
| | | Gundruk ko jhol | 0.61 |
| | | Til ko alu | 0.56 |
| | | Til ko alu | 0.56 |
| Tripura | [green bell pepper, onion, fermented fish, black bean, garcinia indica, ghee, ginger garlic paste] | Kosoi bwtwi | 0.90 |
| | | Kosoi bwtwi | 0.85 |
| | | Guntok (vegetable potage) | 0.81 |
| | | Berema butui (fermented fish and chilli potage) | 0.77 |
| | | Chakhui butwi (fermented fish with ginger) | 0.76 |